DESCRIPTION OF *ODONTACARUS VEITCHI* SP. NOV. (ACARINA: TROMBICULIDAE)

by

R. V. SOUTHCOTT

Honorary Research Associate, South Australian Museum, North Terrace, Adelaide, South Australia 5000

(Manuscript accepted 13 January 1986)

ABSTRACT

SOUTHCOTT, R. V. 1986. Description of *Odontacarus veitchi* sp. nov. (Acarina: Trombiculidae). *Rec. S. Aust. Mus.* 19(14): 213-217.

Odontacarus veitchi sp. nov. (Acarina: Trombiculidae) larva from central Queensland is described. The classificatory key to the larval *Odontacarus* of the Australian, New Guinean and south-east Asian region is revised.

INTRODUCTION

The author recently (1986) described various stadia in the life history of *Odontacarus swani* Southcott, 1986, and revised the classification of the larvae of *Odontacarus* Ewing, 1929, for Australia and adjacent parts of the southwest Pacific area. Difficulties in the placement of *O. athertonensis* (Womersley, 1945) and related species were referred to. In a cognate* study detailed statistical analyses of morphological features of this group of larvae were presented (Veitch and Southcott, 1984), which showed significant metric differences between the species presenting classification difficulties: *O. mccullochi* (Womersley, 1944), *O. athertonensis* (Wom.), *O.* "species S"† (now *O. swani* Southcott), as well as some further specimens.

This last-named group, from Queensland and Papua-New Guinea, included a few larvae in poor condition and hence unsuitable for detailed description, but also a series of six specimens from central Queensland (identification numbers ACB733A-F) of which five specimens were in good condition, suitable for detailed measurements and description. These had been considered as conspecific with *O. athertonensis* larvae by Womersley (slide identifications), and by Goff (1979). Re-examination of this series shows that it represents a separate species, which can be distinguished from other species of *Odontacarus* (subgenus *Leogonius* Vercammen-Grandjean, 1968), particularly by leg metric characters.

All measurements are in μm, unless stated otherwise. Seta and other terminology is as given by Southcott (1986) and Veitch and Southcott (1984).

Odontacarus veitchi sp. nov.

(Figs 1A-3, 2A-B)

Description of Holotype larva, N1981390 (ACB733F):

Colour in life not recorded, presumably red. Length of idiosoma (mounted on slide) 237, width 203; total length of animal from tip of cheliceral fangs to posterior pole of idiosoma 328.

Dorsal scutum slightly wider than long (nasus included); nasus well-developed, narrow, with rounded tip and slightly sinuous sides, meeting the body of shield at right angles. Anterolateral angles of scutum rounded, lateral borders slightly concave, running to rounded posterolateral angles, posterolateral borders concave, posterior pole evenly rounded, projecting. AM scutalae tapering, slightly pointed, lightly setulose; AL and PL scutalae similar. Sensillary setae normal, well setulose in distal half. Sensillary sockets slightly anterior to level of bases of PL setae, set slightly obliquely.

Standard and other metric data for type series as in Table 1.

Eyes 2 + 2, sessile, oval, conjoined, near PL angles of scutum. Maximum diameter of anterior eye 18, posterior 13.

Dorsal idiosomalae normal, slightly tapering, lightly setulose, pointed at tip, arranged 2 ('post-humerals'), 6, then in vague rows across dorsum, of ca 10, total 58.

Ventral surface of idiosoma with a pair of pointed, setulose setae between coxae III, ca 36 long. Venter of opisthosoma bears 48 further setae, 24-36 long, with outstanding setules; posterior setae longer and slightly blunted, similar to posterior dorsal idiosomalae. Anus (uroporus) oval, 23 long by 15 wide; about 23 setae anterior to mid-level of uroporus, and 25 setae posterior to same level. Urstigma oval, in normal site between the contiguous coxa I and II of each side, 18 long by 14 wide.

Coxalae 2, 1, 1. All coxalae long, well setulose, tapering to a fine point. Lateral coxala I 60 long, medial coxala I 60, coxala II 51, coxala III ca 55.

Legs well-developed, normal, I 416 long, II 368, III 430 (all lengths include coxae and claws). Leg scobalae normal, pointed, well setulose. Scobalar formulae (including mastalae): trochanters 1, 1, 1, femora 6, 5, 4, genua 4, 4, 5, tibiae 7, 6, 6, tarsi 20, 17, 13.

---

* It was originally planned that that study would follow the paper here shown as Southcott (1986). However, unforeseen publication schedules reversed the order of appearances.

† Unrelated to an undescribed species mentioned as "s" by Vercammen-Grandjean (1968, p. 121).

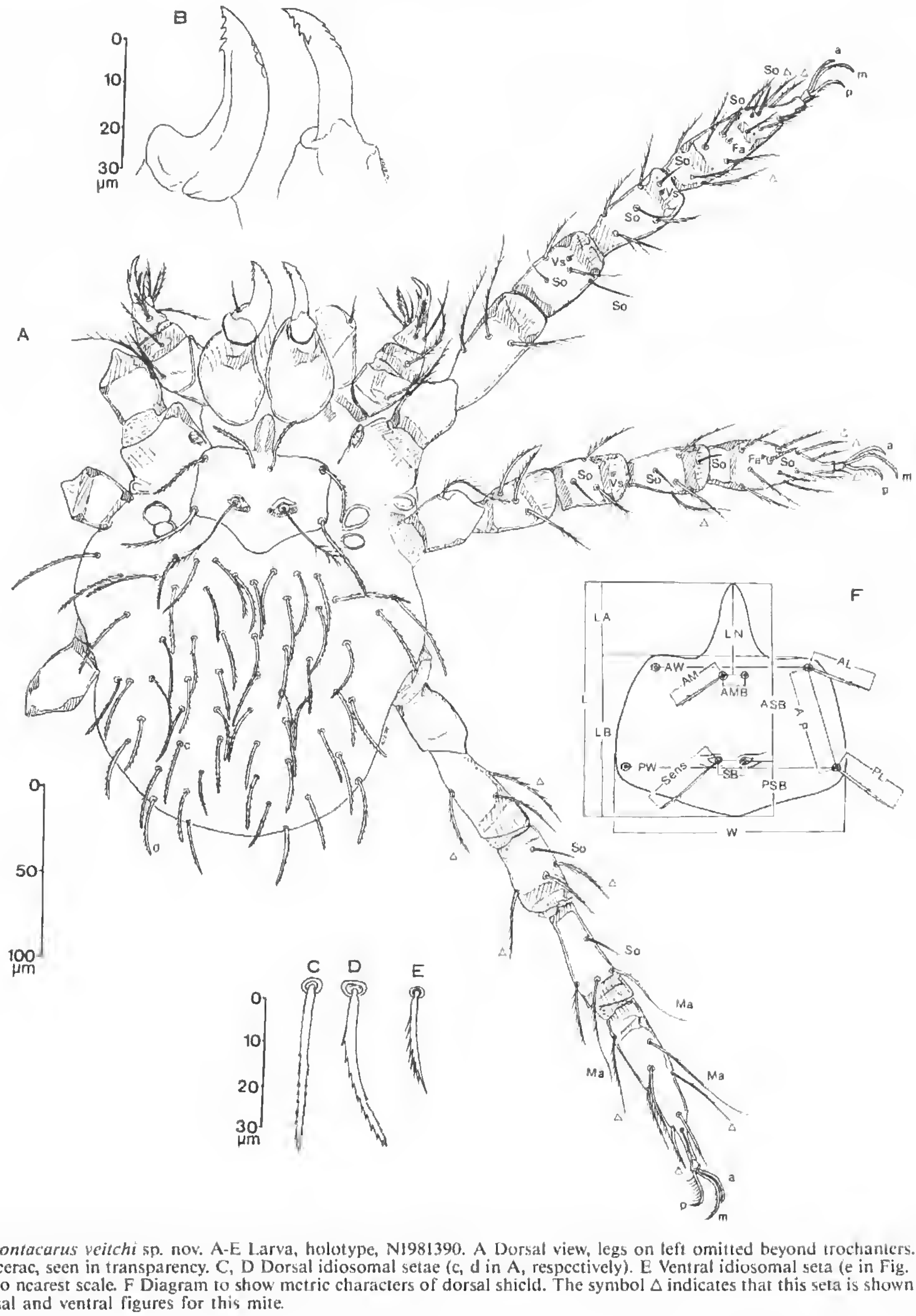

FIG. 1. *Odontacarus veitchi* sp. nov. A-E Larva, holotype, N1981390. A Dorsal view, legs on left omitted beyond trochanters. B Tips of chelicerae, seen in transparency. C, D Dorsal idiosomal setae (c, d in A, respectively). E Ventral idiosomal seta (e in Fig. 2a). All figures to nearest scale. F Diagram to show metric characters of dorsal shield. The symbol Δ indicates that this seta is shown in both the dorsal and ventral figures for this mite.

Leg specialized setae as follows: SoGeI.32d (24 long), VsGeI.72d (4), SoGeI.72pd (27), SoTiI.55d (18), VsTiI.82d (4), SoTiI.85d (16) i.e. slightly distal, also anterior, to VsTiI.

SoGeII.25d (20), VsGeII.64d (3), SoTiII.36d (16), SoTiII.88d (15), SoGeIII.27d (22), SoTiIII.35d (20).

Both tarsus I and II bear a large central dorsal solenoidala, I 16 long, II 18 long. On tarsus I is famala FaTaI, 3 long, level with proximal SoTaI. On tarsus II is FaTaII, 4 long, proximal to SoTaII (see Fig. 1A). Tibia III has two long mastalae (mastisetae); tarsus III has one mastala. Pretarsal formula 1, 1, 0.

Tarsus I 91 long by 30 across, II 74×27, III 97×24 (tarsal lengths exclude claws and pedicle). Tarsal claws normal, falciform, slender, with strong setules (onychotrichs) on anterior and posterior; middle claw longer and more slender than neolaterals, with weak setules.

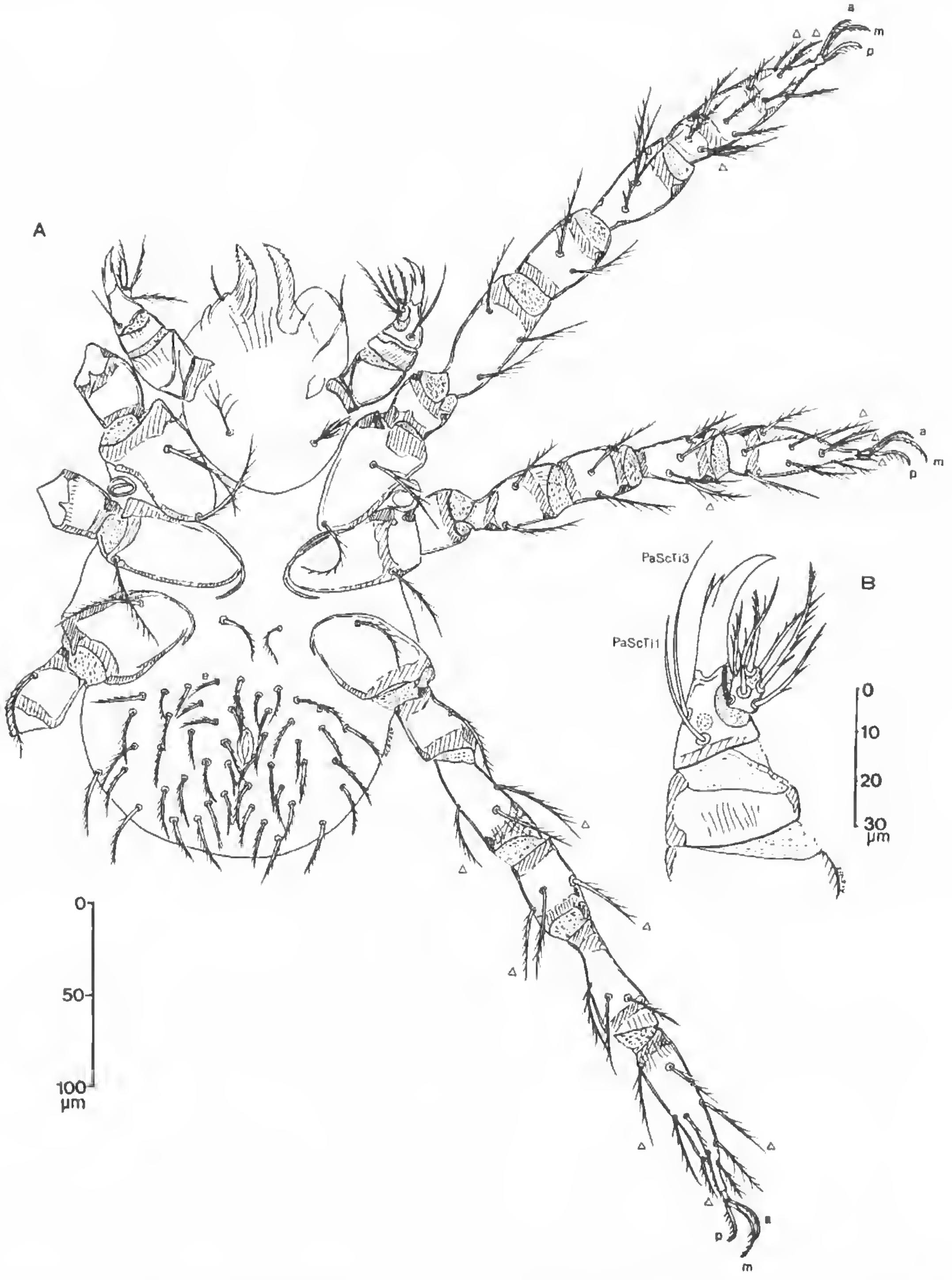

FIG. 2. *Odontacarus veitchi* sp. nov., larva. A Ventral aspect of holotype; legs on left omitted beyond trochanters. B Ventral view of palp of paratype N1981385. (Both to nearest scale).

Gnathosoma normal, well developed. Combined chelicerae bases ca 80 across; chelicerae 91 long from tip of fangs to posterior pole of bases. Cheliceral fangs stout, curved, pointed, with 3 or 4 strong retrorse teeth along concave, flexor (=dorsal) edge, and 2-5 blunted denticles along convex, extensor (=ventral) edge. Galeala 30 long, with one faint setule. Gnathobasal setae curved, pointed, 25 long, with several long setules.

Palpi normal, strong. Palpal setal formula 1, 1, 3, 8, with palpal setal formula B, B, BNN, So+7B. Palpal tibial claw trifurcate. No supracoxalae to legs or gnathosoma.

Material examined

Queensland: Mt. Jukes, 6.ix.1951, 6 larvae, collected on card, E. H. Derrick. Holotype with South Australian Museum registration number N1981390; it bears on the right hand label *"Acomatacarus athertonensis* Wom." and the locality information given above, also "G197". The word "Paratype", which was

TABLE 1. METRIC DATA FOR TYPE SERIES OF LARVAE OF *ODONTACARUS VEITCHI* SP. NOV. IN μm*

Specimen number	N1981390 ACB733F (Holotype)	N1981385 ACB733A	N1891386 ACB733B	N1981388 ACB733D	N1981389 ACB733E	Means
AW	67	77	77	71	73	73.0
PW	76	89	89	77	80	82.2
SB	25	29	27	26	29	27.2
ASB	53	58	56	51	52	54.0
PSB	28	29	30	29	30	29.2
L	81	87	86	80	82	83.2
LA	21	22	20	19	20	20.4
LB	60	65	66	61	62	62.8
LN	31	34	35	29	29	31.6
W	86	96	99	85†	85	90.2
AP	29	30	32	29	32	30.4
AM	34	40	36	38	41	37.8
AL	40	41	42	38	40	40.2
PL	49	60	64	52	49	54.8
AMB	9	11	12	10	13	11.0
Sens 51	51	48	38	—	47.0	
PW/LB	1.27	1.37	1.35	1.26	1.29	—
DS	36-58	36-62	35-66	33-62	35-64	35.0-62.4
MDS	33-35	31-38	33-38	33-35	35-38	33.2-36.8
PDS	36-38	38-42	40-43	36-40	36-42	37.2-41.0
GeI	54	59	59	53	58	56.6
TiI	61	66	66	60	62	63.0
GeII	46	49	48	47	46	47.2
TiII	49	54	54	51	51	51.8
GeIII	50	55	55	49	59	53.6
TiIII	67	68	71	65	69	68.0
AW/TiIII	1.00	1.13	1.08	1.09	1.06	—
PW/TiIII	1.13	1.31	1.25	1.18	1.16	—

* See the criteria given in footnote to Table 6 in Southcott (1986).

† Another estimate of this variate is 82 μm (see preceding footnote, and Veitch and Southcott (1984).

clearly in error, has been obliterated with white ink. On the left hand label is written "Was marked 'PARATYPE'/ACB733F/*Odontacarus veitchi* Southcott HOLOTYPE/N1981390.".

The five paratypes, from the same source and collector, have similar labels, with serial numbers on them as follows: N1981386, ACB733B, G193; N1981387, ACB733C, G197; N1981388, ACB733D, G196; N1981389, ACB733E, G206; N1981385, ACB733A, G192. The unofficial (personal) registration numbers with an ACB prefix have been used by me in previous publications (Veitch and Southcott, 1984; Southcott, 1986).

Systematic position

To distinguish this new species, criterion number 17 in my key (Southcott, 1986, p. 180) should be altered to the following:

17 Ventral opisthosomal setae 48-54 in number 17A
Ventral opisthosomal setae in range of 35-45 in number 18

17A Longer dorsal idiosomal setae 42-56 long.
Genu I 42-49 long. Tibia III 57-65 long.
Palpal setal formula B, B, BBB, So + 7B . . . .
. . . . *O. athertonensis* (Womersley)
Longer dorsal idiosomal setae 58-66 long.
Genu I 54-59 long. Tibia III 65-71 long.
Palpal setal formula B, B, BNN So+7B . . . . . .
. . . . *O. veitchi* sp. nov.

Remarks

Further details of the analyses of the statistical data for this and related species are given in Veitch and Southcott (1984).

Nomenclature

The species is dedicated to Mr L. G. Veitch, CSIRO Division of Mathematical Statistics, in recognition of his assistance in the metric studies of Australian trombidioid mites.

ACKNOWLEDGMENTS

I thank the South Australian Museum for access to these specimens.

Thanks are due to the National Health and Medical Research Council, Commonwealth of Australia, for assistance.

REFERENCES

EWING, H. E. 1929. A manual of external parasites. (Charles C. Thomas: Springfield, Illinois and Baltimore, Maryland).

GOFF, M. L. 1979. The genus *Odontacarus* (Acari: Trombiculidae) in New Guinea, with descriptions of four new species. *J. med. Entomol.* **15**: 143-154.

SOUTHCOTT, R. V. 1986. The genus *Odontacarus* (Acarina: Trombiculidae). II. Observations on the life history and morphology of *Odontacarus swani* n. sp., and related forms. *Rec. S. Aust. Mus.* **19**: 169-200.

VEITCH, L. G., and SOUTHCOTT, R. V. 1984. Discriminant analysis using metric data from larval specimens of three species of *Odontacarus* (Acarina: Trombiculidae). *Aust. J. Zool.* **32**: 519-526.

VERCAMMEN-GRANDJEAN, P. H. 1968. The chigger mites of the Far East (Acarina: Trombiculidae & Leeuwenhoekiidae). An illustrated key and a synopsis; some new tribes, genera and subgenera. (U.S. Army Medical Research and Development Command: Washing D.C. 20315).

WOMERSLEY, H. 1944. Notes on and additions to the Trombiculinae and Leeuwenhoekiinae (Acarina) of Australia and New Guinea. *Trans. R. Soc. S. Aust.* **68**: 82-112.

WOMERSLEY, H. 1945. Acarina of Australia and New Guinea. The family Leeuwenhoekiidae. *Trans. R. Soc. S. Aust.* **69**: 96-113.